

WHAT IS CLAIMED IS:

1. An image processing apparatus, comprising:
a first pattern detecting mechanism configured to detect a background dot pattern embedded in a background image included in image data of an original image from the image data;
a memory for storing an anti-copy background dot pattern; and
a pattern identity determining mechanism configured to compare the detected background dot pattern with the anti-copy background dot pattern stored in the memory and determine whether the detected background dot pattern is substantially identical to the anti-copy background dot pattern stored in the memory.
2. An image processing apparatus as defined in Claim 1, wherein the image data is data obtained by a reading of the original image with an original reading apparatus.
3. An image processing apparatus as defined in Claim 2, wherein the original reading apparatus is included in the image processing apparatus.
4. An image processing apparatus as defined in Claim 2, further comprising:
a second pattern detecting mechanism configured to detect a background dot pattern embedded in a background image included in image data

of an original image from the image data and store the detected background dot pattern as an anti-copy background dot pattern in the memory.

5. An image processing apparatus as defined in Claim 1, wherein the pattern identity determining mechanism compares a quantitative characteristic of the detected background dot pattern with quantitative characteristic of the anti-copy background dot pattern stored in the memory.

6. An image processing apparatus as defined in Claim 5, wherein the quantitative characteristic of the background dot pattern includes quantitative characteristic of a base area included in the background dot pattern.

7. An image processing apparatus as defined in Claim 5, wherein the quantitative characteristic of the background dot pattern includes quantitative characteristic of a message area included in the background dot pattern.

8. An image processing apparatus as defined in Claim 5, wherein the quantitative characteristic of the background dot pattern includes quantitative characteristic of a base area and a message area both included in the background dot pattern.

9. An image processing apparatus as defined in Claim 5, wherein the pattern identity determining mechanism determines that the detected background dot pattern is substantially identical to the anti-copy background dot

pattern when a difference between quantities of the detected background dot pattern and the anti-copy background dot pattern is smaller than a predetermined threshold value.

10. An image processing apparatus as defined in Claim 1, further comprising an output preventing mechanism configured to prevent the image data from being output when the detected background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the pattern identity determining mechanism.

11. An image processing apparatus as defined in Claim 1, further comprising an output preventing mechanism configured to prevent the image data from being printed when the detected background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the pattern identity determining mechanism.

12. An image processing apparatus, comprising:
first pattern detecting means for detecting a background dot pattern embedded in a background image included in image data of an original image from the image data;
storing means for storing an anti-copy background dot pattern; and
pattern identity determining means for comparing the detected background dot pattern with the anti-copy background dot pattern stored in the storing means and determining whether the detected background dot pattern is

substantially identical to the anti-copy background dot pattern stored in the storing means.

13. An image processing apparatus as defined in Claim 12, wherein the image data is data obtained by a reading of the original image with an original reading apparatus.

14. An image processing apparatus as defined in Claim 13, wherein the original reading apparatus is included in the image processing apparatus.

15. An image processing apparatus as defined in Claim 13, further comprising:

a second pattern detecting means for detecting a background dot pattern embedded in a background image included in image data of an original image from the image data and storing the detected background dot pattern as an anti-copy background dot pattern in the storing means.

16. An image processing apparatus as defined in Claim 12, wherein the pattern identity determining means compares a quantitative characteristic of the detected background dot pattern with a quantitative characteristic of the anti-copy background dot pattern stored in the memory.

17. An image processing apparatus as defined in Claim 12, wherein quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area included in the background dot pattern.

18. An image processing apparatus as defined in Claim 12, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a message area included in the background dot pattern.

19. An image processing apparatus as defined in Claim 12, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area and a message area both included in the background dot pattern.

20. An image processing apparatus as defined in Claim 16, wherein the pattern identity determining means determines that the detected background dot pattern is identical to the anti-copy background dot pattern when a difference between quantities of the detected background dot pattern and the anti-copy background dot pattern is smaller than a predetermined threshold value.

21. An image processing apparatus as defined in Claim 12, further comprising output preventing means for the image data from being output when the detected background dot pattern is determined as substantially

identical to the anti-copy background dot pattern by the pattern identity determining means.

22. An image processing apparatus as defined in Claim 12, further comprising output preventing means for the image data from being printed when the detected background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the pattern identity determining means.

23. An image processing method, comprising:
storing an anti-copy background dot pattern;
providing image data of an original image;
detecting a first background dot pattern embedded in a background image included in the image data of the original image;
comparing the detected first background dot pattern with the stored anti-copy background dot pattern; and
determining whether the detected first background dot pattern is substantially identical to the stored anti-copy background dot pattern.

24. An image processing method as defined in Claim 23, wherein the image data is data obtained by a reading of the original image with an original reading apparatus.

25. An image processing method as defined in Claim 24, wherein the original reading apparatus is a scanner included in an image processing apparatus.

26. An image processing method as defined in Claim 24, further comprising:

detecting a second background dot pattern embedded in a background image included in image data of an original image; and

storing the detected second background dot pattern as the anti-copy background dot pattern.

27. An image processing method as defined in Claim 23, wherein the determining step compares a quantitative characteristic of the detected first background dot pattern with a quantitative characteristic of the anti-copy background dot pattern.

28. An image processing method as defined in Claim 23, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area included in the background dot pattern.

29. An image processing method as defined in Claim 23, wherein the characteristic of the background dot pattern includes a quantitative characteristic of a message area included in the background dot pattern.

30. An image processing method as defined in Claim 23, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area and a message area both included in the background dot pattern.

31. An image processing method as defined in Claim 27, wherein the determining step determines that the detected first background dot pattern is substantially identical to the anti-copy background dot pattern when a difference between quantities of the detected background dot pattern and the anti-copy background dot pattern is smaller than a predetermined threshold value.

32. An image processing method as defined in Claim 23, further comprising a step of preventing the image data from being output when the detected first background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the determining step.

33. An image processing method as defined in Claim 23, further comprising a step of preventing the image data from being printed when the detected first background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the determining step.

34. A computer program product stored on a computer readable storage medium for, when run on an image processing apparatus, carrying out an image processing method, comprising:

storing an anti-copy background dot pattern;

providing image data of an original image;
detecting a first background dot pattern embedded in a background image included in the image data of the original image;
comparing the detected first background dot pattern with the stored anti-copy background dot pattern; and
determining that the detected first background dot pattern is substantially identical to the stored anti-copy background dot pattern.

35. A computer program product as defined in Claim 34, wherein the image data is data obtained by a reading of the original image with an original reading apparatus.

36. A computer program product as defined in Claim 35, wherein the original reading apparatus is a scanner included in an image processing apparatus.

37. A computer program product as defined in Claim 35, further comprising:

detecting a second background dot pattern embedded in a background image included in image data of an original image; and

storing the second detected background dot pattern as the anti-copy background dot pattern.

38. A computer program product as defined in Claim 34, wherein the determining step compares a quantitative characteristic of the

detected background dot pattern with a quantitative characteristic of the anti-copy background dot pattern.

39. A computer program product as defined in Claim 34, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area included in the background dot pattern.

40. A computer program product as defined in Claim 34, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a message area included in the background dot pattern.

41. A computer program product as defined in Claim 34, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area and a message area both included in the background dot pattern.

42. A computer program product as defined in Claim 38, wherein the determining step determines that the detected first background dot pattern is substantially identical to the anti-copy background dot pattern when a difference between quantities of the detected background dot pattern and the anti-copy background dot pattern is smaller than a predetermined threshold value.

43. A computer program product as defined in Claim 34, further comprising a step of preventing the image data from being output when the detected first background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the determining step.

44. A computer program product as defined in Claim 34, further comprising a step of preventing the image data from being printed when the detected first background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the determining step.

45. A computer readable medium storing computer instructions for performing an image processing method, comprising the steps of:

storing an anti-copy background dot pattern;

providing image data of an original image;

detecting a first background dot pattern embedded in a background image included in the image data of the original image;

comparing the detected first background dot pattern with the stored anti-copy background dot pattern; and

determining that the detected background dot pattern is substantially identical to the stored anti-copy background dot pattern.

46. A computer readable medium as defined in Claim 45, wherein the image data is data obtained by a reading of the original image with an original reading apparatus.

47. A computer readable medium as defined in Claim 46, wherein the original reading apparatus is a scanner included in an image processing apparatus.

48. A computer readable medium as defined in Claim 45, further comprising:

detecting a second background dot pattern embedded in a background image included in image data of an original image; and

storing the second detected background dot pattern as the anti-copy background dot pattern.

49. A computer readable medium as defined in Claim 45, wherein the determining step compares a quantitative characteristic of the detected background dot pattern with a quantitative characteristic of the anti-copy background dot pattern.

50. A computer readable medium as defined in Claim 45, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area included in the background dot pattern.

51. A computer readable medium as defined in Claim 45, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a message area included in the background dot pattern.

52. A computer readable medium as defined in Claim 45, wherein the quantitative characteristic of the background dot pattern includes a quantitative characteristic of a base area and a message area both included in the background dot pattern.

53. A computer readable medium as defined in Claim 49, wherein the determining step determines that the detected first background dot pattern is substantially identical to the anti-copy background dot pattern when a difference between quantities of the detected background dot pattern and the anti-copy background dot pattern is smaller than a predetermined threshold value.

54. A computer readable medium as defined in Claim 45, further comprising a step of preventing the image data from being output when the detected first background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the determining step.

55. A computer readable medium as defined in Claim 45, further comprising a step of preventing the image data from being printed when the detected first background dot pattern is determined as substantially identical to the anti-copy background dot pattern by the determining step.

56. An image processing apparatus as defined in Claim 1, wherein the first background dot pattern is generated together with the original image.

57. An image processing method as defined in Claim 23, wherein the first background dot pattern is generated together with the original image.

58. A computer readable program as defined in Claim 34, wherein the first background dot pattern is generated together with the original image.

59. A computer readable medium as defined in Claim 45, wherein the first background dot pattern is generated together with the original image.